

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000287**Date Inspected:** 09-Jul-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Huang Wei and Xu Bing**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** N/A**Summary of Items Observed:**

The CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welding qualification testing pertinent for the welding qualification records (PQR) PQR HP2007148, PQR HP2007247-1, and PQR HP2007249 scheduled for this project. ZPMC, welder Chen Ru Yang was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3211 for the PQR identified as HP2007148. Base metal was designated as A-709 Grade HPS485WT2/Z (Heat # 07101250N). ZPMC followed the Production procedure WPS criteria (AWS 5.13) using the shielded metal arc welding (SMAW) process in the flat (1G) position with the 5.0 mm diameter designated as E7018-1, brand name THJ506Fe-1. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat interpass temperatures. The QA inspector witnessed weld passes # 63 through 66 (layer 24). The QA inspector performed random verifications of the welding parameters for a total of 4 passes. The QA inspector found that the welding parameters taken by Quality Control (QC) inspector Xu Bing and ZPMC Certified Welder Inspector Huang Wei appeared to be accurate and in accordance with the contract documents.

The QA inspector performed a final visual inspection and observed that the weld reinforcement appeared to be in compliance with the contract documents. Caltrans lot # B71-031-07 was assigned to this PQR testing on this date. ZPMC, welder Zhu Hai Ping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3214 for the PQR identified as HP2007249. Base metal was designated as A-709 Grade HPS485W (Heat # 06103565N). ZPMC followed the Production procedure WPS criteria (AWS 5.13) using the shielded metal arc welding (SMAW) process in the overhead (4G) position with the 4.0 mm diameter electrode designated as E7018-1, brand name THJ506Fe-1. The QA Inspector verified dimensions for the test coupon, amperages, voltages, travel speeds, preheat and heat interpass temperatures. The QA inspector witnessed passes # 1 through 12 (layers 1 thru 6). The QA inspector performed random verifications

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of the welding parameters for a total of 12 passes. The QA inspector found that the welding parameters taken by ZPMC Certified Welding Inspector Huang Wei appeared to be accurate and in accordance with the contract documents. The welding of PQR HP2007249 test coupon was still in process at the end of the shift.

ZPMC, welder Chen Ru Yang was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-2234 for the PQR identified as HP2007247-1. Base metal was designated as A-709 Grade 50T-2 (Heat #07200455020202). ZPMC followed the Production procedure WPS criteria (AWS 5.13) using the flux cored arc welding (FCAW-G) process in the overhead (4G) position with the 1.4 mm diameter electrode designated as E71T-1, brand name Supercored 71H. The QA Inspector verified dimensions for the test coupon, amperages, voltages, travel speeds, gas flow, heat and heat interpass temperatures. The QA inspector witnessed passes # 1 through 4 (layers 1 thru 3). The QA inspector performed random verifications of the welding parameters for a total of 4 passes. The QA inspector found that the welding parameters taken by Quality Control (QC) inspector Xu Bing appeared to be accurate and in accordance with the contract documents. However, the test coupon was rejected by ABF due to the actual weld width of the third weld bead was 18 mm in lieu of 16 mm in accordance with subsection 4.14. In addition, the welding stops when the welding was resumed at the area of interest had craters which ZPMC did not clean to insure sound weld.

Mr. Dye stopped ZPMC for continuing welding and relayed to ZPMC that the resolution of these issues needed to wait until next day because he needed directions from ABF QA Supervisor Nate Lindell with Inspectech who was not available at that time.

The QA inspector had a conversation with Caltrans Task Leader Dave McClary. The QA inspector questioned Mr. McClary about the resolution for the electrodes E-7018-1 lot # 09321/ diameter size 4.0 mm and lot # 09421/ diameter size 5.0 mm received by ZPMC from the manufacturer Tianjin Bridge Welding Materials Group without properly identification (lot, brand or heat numbers and electrode size). Mr. McClary relayed to the QA inspector that Caltrans had accepted the letter of the Manufacturer as resolution for ZPMC welding with electrodes that were not identified as per contract documents, considering that these electrodes would not be used during fabrication.

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Acuna, Alfredo	Quality Assurance Inspector
Reviewed By:	McClary, David	QA Reviewer
